Downloaded from http://journals.lww.com/jnmr by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 12/01/2024

Original Article

Comparison of Empathy with Patients between Surgical and Psychiatric Medical Residents

Reyhane Hizomi Arani[1], Zohrehsadat Naji[2], Ali Moradi[3], Shohreh Pooreh[4], Yosra Merati[4], Seyed Vahid Shariat[5,6], Payman Salamati[1]

[1]Sina Trauma and Surgery Research Center, Tehran University of Medical Sciences, Tehran, Iran, [2]Young Researchers and Elites Club, Science and Research Branch, Islamic Azad University, Tehran, Iran, [3]Occupational Health and Safety Research Center, Hamadan University of Medical Sciences, Hamadan, Iran, [4]Department of Mental Health, Iran University of Medical Sciences, Tehran, Iran, [5]Mental Health Research Center, Psychosocial Health Research Institute, Iran University of Medical Sciences, Tehran, Iran, [6]School of Behavioral Sciences and Mental Health (Tehran Institute of Psychiatry), Iran University of Medical Sciences, Tehran, Iran

Abstract

Background: Empathy is considered paramount to the medical profession because it affects patients' satisfaction, compliance, and quality of care. It has been studied that medical residents in non-psychiatry specialties (especially general surgery) pay less attention to their patients' experiences and emotions. This study measured and compared surgical and psychiatric medical residents' empathy scores. **Materials and Methods:** In 2021, we studied all first- to third-year medical residents of psychiatry and general surgery who worked in hospitals affiliated with the Iran University of Medical Sciences (IUMS), Tehran, Iran. Eighty-eight eligible residents, including 53 psychiatric and 35 surgical residents, were enrolled in this cross-sectional study. The Persian-validated Jefferson empathy scale was used to evaluate empathy among the residents. Chi-square, *t*-test, and ANOVA were used for group comparisons. A multivariable linear regression analysis was used to find the factors associated with the empathy score. Data analysis was conducted using the SPSS version 21. **Results:** The total mean score (SD) of empathy was 104.34 (11.10). Female residents had higher mean (SD) empathy scores compared to their male counterparts (109.21 [9.29] vs. 99.14 [12.72]; $p < 0.001$), and psychiatric residents scored higher than surgical residents (109.18 [8.91] vs. 96.67 [12.50]; $p < 0.001$). Psychiatric residency was independently associated with a higher empathy score (standardized coefficients; beta = 0.41, $p = 0.001$). **Conclusions:** Psychiatric residents have significantly higher empathy with patients than surgical residents. There was also a significant difference among male and female residents. Therefore, it may be recommended that structural education directions be developed for residents to promote empathy during the residency program.

Keywords: *Empathy, Iran, medical residency, professionalism*

Introduction

Empathy involves listening, understanding, and placing oneself in other people's positions to support them better.[1] Interpersonal communication skills are essential to our beliefs about physicians' professional competence. Empathy is paramount to the medical profession because it affects patient satisfaction, compliance, quality of care, and outcomes.[2] Moreover, having higher cognitive empathy levels could be a protective factor against burnout among physicians.[3]

Residency is one of the most challenging steps of any physician's education, associated with a high workload, sleep deprivation, and lack of personal time. These difficulties may influence the medical residents' ability to show empathy toward their patients. Several hypotheses suggest that the levels of empathy differ between specialties due to different workloads, job satisfaction, and stressful circumstances.[4] In Iran's medical education system, people-oriented specialists, such as psychiatrists, spend more time communicating and interacting with patients in a friendly atmosphere. On the other hand, technology-oriented specialists, such as general surgeons, experience stressful lifestyles. Accordingly, a recent systematic review revealed some challenges experienced by general surgery residents, such as lack of experience and patience, problems with peer interactions, poor communication skills with patients, work overload, long shifts, and sleep deprivation.[5] Moreover, general surgery residents experience more emotional exhaustion and distress symptoms, including depression, suicidal ideation, anxiety, and burnout.[6]

It has been studied that medical residents in non-psychiatry specialties pay less attention

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Arani RH, Naji Z, Moradi A, Pooreh S, Merati Y, Shariat SV, *et al.* Comparison of empathy with patients between surgical and psychiatric medical residents. Iran J Nurs Midwifery Res 2024;29:749-53.

Submitted: 19-Jul-2023. **Revised:** 07-Sep-2024. **Accepted:** 09-Sep-2024. **Published:** 20-Nov-2024.

Address for correspondence:
Prof. Payman Salamati, Sina Trauma and Surgery Research Center, Tehran University of Medical Sciences, P.O. Box: 1136746911, Tehran, Iran.
E-mail: psalamati@tums.ac.ir

Access this article online

Website: https://journals.lww.com/jnmr

DOI: 10.4103/ijnmr.ijnmr_202_23

Quick Response Code:

Downloaded from http://journals.lww.com/jnmr by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 12/01/2024

to their patients' experiences, emotions, and body language.[7] The issue has received little practical and theoretical attention in medical and scientific research in Iran as a middle-income and developing country. Surprisingly, unlike medical students,[8] there is no formal training on empathy available for Iranian medical residents.[9] Kheirabadi's study showed that psychiatric residents had the highest empathy scores, while general surgery residents had one of the lowest empathy scores among 17 different specialties.[10] The results of such studies can provide evidence for the necessity of improving the educational curriculum of medical residents and paying more attention to professional ethics among them, particularly those with stressful and high work pressure. Hence, we conducted a study to evaluate empathy with patients among psychiatry and general surgery medical residents of Iran University of Medical Sciences (IUMS), Tehran, Iran, and examine factors, including age, academic year level, gender, and specialty.

Materials and Methods

This analytical cross-sectional study was conducted in a hospital-based setting. We included all first- to third-year residents of psychiatry and general surgery as a census affiliated with IUMS (including four hospitals of Hazrat-Rasoul, the psychiatry hospital of Iran, Firoozgar, and Akbarabadi) in 2021. Informed consent is the other criterion for entering the study.

We excluded fourth-year residents from the study, as they were occupied with their final evaluation exams. Moreover, we excluded the international medical residents, so all the participants were originally Iranian and fluent in Persian. Finally, all 88 eligible residents, including 53 psychiatric and 35 surgical residents, were enrolled in the study.

The Jefferson scale of empathy was developed by Hojat *et al.*[11] to evaluate empathy among residents. The questionnaire contains 20 items on an ordinal Likert scale, with a score of 1 (maximum disagreement) to 7 points (maximum agreement) for each item, ranging from 20 to 140. The English version of the questionnaire is provided as a supplementary file. Several studies examined and confirmed the validity and reliability of the original questionnaire.[12,13] Dr. Hashempor showed that the Persian translation of the Jefferson Scale of Physician Empathy-Health Professionals (JSPE-HP) questionnaire has good validity and reliability and can be used in research. The original English version of the questionnaire was translated into Persian by a forward-backward translation method. Then, the validity and internal consistency were tested on 554 participants to examine their comprehensibility. For the final approval of the Persian version, five physicians fluent in English were asked to comment on the ambiguous points in the concept of the questions. In addition, its questions were evaluated regarding compliance with Iranian culture (content validity).[14] We used the same Persian version in our study. In addition, demographic data, including age, sex, specialty, and academic year level, were also collected. We considered a small gift for those who participated in our study after filling out the questionnaire. Two trained physicians interviewed the residents and introduced the project to them. Two hospital education staff were asked to deliver the paper questionnaire to the residents. Residents were asked to answer and return the questions by the end of the same day.

Data were presented as number, percentage, mean, and standard deviation. Chi-square, *t*-test, and ANOVA were used for group comparisons. Multivariable linear regression analysis was used to find the predictors of the empathy score by modeling the data and controlling the effects of confounding factors. Specialty (reference: general surgery), academic year level (reference: first year), and gender (reference: women) were entered in the multivariable regression model using the dummy coding method. Data analysis was conducted using the SPSS version 21 for Windows (Chicago, Illinois, USA), and $p < 0.05$ were considered statistically significant.

Ethical considerations

The ethics committee of Tehran University of Medical Sciences (TUMS) approved this study (Ethics Code: IR.TUMS.SINAHOSPITAL.REC.1398.344). All subjects gave verbal and written informed consent and were assured that their personal information would remain confidential. The study protocol complied with TUMS guidelines for manuscript submission.

Results

Table 1 shows the demographic characteristics of the residents, including age, gender, and academic year level, considering their specialties. The mean empathy score of 88 psychiatric and general surgery residents of IUMS hospitals was 104.34 (11.10). Table 2 shows the differences in the empathy score between the residents according to their gender, age, academic year level, and specialty. Female residents had higher mean (SD) empathy scores compared to their male counterparts (109.21 [9.29] vs. 99.14 [12.72]; $p < 0.001$), and psychiatric residents scored higher than surgical residents (109.18 [8.91] vs. 96.67 [12.50]; $p < 0.001$).

Table 3 presents the final multivariable model of the factors affecting the empathy scores of the studied medical residents. After controlling for confounding variables, the specialty was independently related to the empathy score (standardized coefficients; beta = 0.41, $p = 0.001$).

Discussion

This study investigated the factors affecting Iranian surgical and psychiatric residents' empathy with patients and mainly showed the significant relation between specialty and empathy. Moreover, female and male residents had similar

Downloaded from http://journals.lww.com/jnmr by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 12/01/2024

empathy with patients. After adjusting for the confounders, there was no association between age and academic year level with empathy.

This study reported a Jefferson scale score of 109.2 for psychiatric residents. However, previous studies showed the number of 82.64 in Isfahan[10] and 114.2 in Tehran.[15] This variation may be due to different occupational and socio-cultural characteristics. For example, in the context of public hospitals or smaller cities with fewer physicians, there are traces of the dominance of paternalistic behavior in most physician-patient relationships.[16] This may reduce the possibility of developing a friendly and empathetic relationship.

Table 1: Baseline characteristics of the understudied participants based on the specialty

	Specialty				*p*
	General surgery (*n*=35)		Psychiatry (*n*=53)		
	n	(%)	*n*	(%)	
Gender					
Women	4	(8.88)	41	(91.11)	0.001
Men	31	(72.09)	12	(27.90)	
Age					
≤30 years old	13	(54.16)	11	(45.83)	0.091
>30 years old	22	(34.37)	42	(65.62)	
Academic year level					
First year	10	(30.30)	23	(69.69)	0.291
Second year	14	(50.00)	14	(50.00)	
Third year	11	(40.74)	16	(59.25)	

Table 2: Comparison of empathy score between the groups

Study groups	Mean (SD)	*p*
Gender		<0.001
Women	109.21 (9.29)	
Men	99.14 (12.72)	
Specialty		<0.001
General surgery	96.67 (12.50)	
Psychiatry	109.18 (8.91)	
Age		0.449
≤30 years old	102.64 (12.15)	
>30 years old	104.76 (12.12)	
Academic year level		0.08
First year	105.59 (9.88)	
Second year	99.80 (15.12)	
Third year	107.13 (10.31)	

The results demonstrated that medical residents in different specialties had significantly different levels of empathy toward patients. A person-oriented specialty, such as psychiatry, spends more time communicating and interacting with patients; however, technique-oriented specialties spend most of their time working with para-clinical equipment (such as radiology) or operating rooms (such as general surgery). This difference could be explained by residents in person-oriented specialties having more opportunities for conversation with patients and direct contact, resulting in more powerful interpersonal relationships.[17] The stressful nature of the surgical residency and the autocratic relationships in the surgical culture could affect their well-being and quality of life[18] and consequently lower their ability to empathize with patients. In this regard, Williams *et al.*[3] found that many medical residents suffered from burnout, which markedly reduced empathy toward patients.

It is unknown whether this low level of empathy is due to the specialty self-selection or the nature of work in psychiatry consisting of frequent practices in empathetic communication.[19] Studies have shown that medical students who choose a person-oriented specialty have higher interpersonal skills and empathy as baseline personality characteristics than those who enter technique-oriented. Psychiatrists believe that empathy toward patients is one of the most important reasons for choosing this specialty as a career.[20] On the other hand, Weisz *et al.*[21] reported that physicians downregulate their sensory processing unconsciously to have less perception of others' pain as a self-defense mechanism in traumatizing situations at work

Table 3. Standardized and unstandardized coefficients of some factors influencing empathy scores among the residents

Model	Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
	B	Std. Error	Beta		
Constant	-5.39	3.11		-1.73	
Specialty					
General Surgery					
Psychiatry	3.77	1.08	0.41	3.48	0.001
Academic year level	0.89	3.11	0.16	1.80	0.07
Gender					
Women					
Men	-1.59	1.06	-0.18	-1.49	0.149

Model Summary

Model	Method	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	Enter	0.553	0.306	0.281	3.79259

Downloaded from http://journals.lww.com/jnmr by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 12/01/2024

because being too empathic could hinder their efficiency and emotional growth.[22]

Our multivariable analysis had no association between academic year level and empathy. Similarly, some previous studies found no significant differences in the Jefferson empathy scale between medical residents of different academic year levels.[23] Although third-year residents had higher levels of experience and professionalism and less bedside interaction than first- or second-year residents, they have more responsibilities and, consequently, more stress. In the surgical residency program of Iran, third-year residents should spend long hours in the operation room, which is under as much work pressure as first-year residents in the emergency ward and second-year residents in the surgery ward and surgery clinic. So, as empathy scores are associated with emotional exhaustion,[24] they possibly approach their patients in the same empathic manner. Some other studies[25,26] also revealed that an increase in education and subsequent clinical experience and educational training could positively affect empathy. However, Jin *et al.*[27] found lower levels of empathy in higher grades because of the high workload and sleep deprivation among senior residents. These differences can be explained by the difference in residency programs in each specialty and country.

Current results indicated that female and male residents had similar empathy with patients after adjusting the confounders. It seems that gender has no significant role in the empathic relationship with others in the medical care context of Iran. There are controversies regarding the role of gender in empathic behavior in literature. Some previous studies reported the same results.[10,15] On the other hand, studies among Korean[17] and Romanian residents showed that female residents had higher empathy scores than their male counterparts. They believe that women can perceive emotional signals better and better understand others than men.[28] The nurture offspring may play a role in females' greater development of intrinsic empathic capacity during evolution. Only one study showed that male residents had higher empathy scores than female residents.[29]

The findings did not show any differences related to age, similar to a study by Shariat *et al.*[15] on physicians. However, Iranians generally believe that older doctors are more empathetic. The proponents of this belief may point to more maturity in social communication skills, dealing with difficulties, and controlling feelings (such as fear, anger, shame, inadequacy, or failure) in older residents, which could consequently result in higher levels of empathy. On the other hand, older residents may have different concerns and preoccupations about their personal lives, such as raising children. In this regard, Moralle *et al.*[30] found lower levels of empathy in residents with children.

This study had some limitations. First, all study participants were from the same university, which did not reflect the entire Iranian medical population. However, IUMS is one of the top medical universities in Iran and has a heterogeneous medical resident population (from different regions of Iran) regarding demographic characteristics. Second, as a cross-sectional study, the participants were not followed. Third, the self-report measures are not precise to rely on. Further studies can expand this subject to other specialties and hospitals to assess these relationships more accurately.[31,32]

Conclusion

The results showed higher empathy scores in the understudied medical and psychiatric residents compared to surgical ones. The independent effect of specialty on the residents' empathy scores may indicate that the clinical education environment influences empathy toward patients. Professional training on empathy among medical residents may have positive implications. Further research is recommended to study factors influencing empathy using larger samples of residents.

Acknowledgments

The authors would like to thank the residents of the IUMS for their willingness to participate in this study (grant number 98-01-38-25395).

Financial support and sponsorship:

Sina Trauma and Surgery Research Center, Tehran University of Medical Sciences, Tehran, Iran

Conflicts of interest

Nothing to declare.

References

1. Pavlova A, Wang CX, Boggiss AL, O'Callaghan A, Consedine NS. Predictors of physician compassion, empathy, and related constructs: A systematic review. J Gen Intern Med 2021;37:900-11.
2. Han JL, Pappas TN. A review of empathy, its importance, and its teaching in surgical training. J Surg Educ 2018;75:88-94.
3. Williams B, Lau R, Thornton E, Olney LS. The relationship between empathy and burnout–lessons for paramedics: A scoping review. Psychol Res Behav Manag 2017;10:329-37.
4. Razi MO, Fouzia R, Razzaque MS. Decline of empathy among healthcare apprentices. Int Med Educ 2023;2:232-8.
5. Yaow CY, Mok HT, Ng CH, Devi MK, Iyer S, Chong CS. Difficulties faced by general surgery residents. A qualitative systematic review. J Surg Educ 2020;77:1396-406.
6. Lebares CC, Guvva EV, Ascher NL, O'Sullivan PS, Harris HW, Epel ES. Burnout and stress among US surgery residents: Psychological distress and resilience. J Am Coll Surg 2018;226:80-90.
7. Ferreira S, Afonso P, Ramos MD. Empathy and burnout: a multicentre comparative study between residents and specialists. Journal of Evaluation in Clinical Practice. 2020;26:216-22.
8. Hizomi Arani R, Naji Z, Moradi A, Shariat SV, Mirzamohamadi S, Salamati P. Comparison of empathy with patients between first-year and last-year medical students of Tehran university of

Downloaded from http://journals.lww.com/jnmr by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 12/01/2024

medical sciences. BMC Med Educ 2021;21:460.

9. Yaghmaei M, Monajemi A, Arab M. Empathy with patients in the medical education program of Iran; its status and training. J Med Educ 2016;15:e105492.
10. Kheirabadi G, Golshani L, Masaeli N, Kheirabadi D, Hajrahimi M. Residents' empathy with patients in Isfahan university of medical sciences. Iran J Med Educ 2016;16:1-8.
11. Hojat M, Maio V, Pohl CA, Gonnella JS. Clinical empathy: Definition, measurement, correlates, group differences, erosion, enhancement, and healthcare outcomes. Discov Health Syst 2023;2:8.
12. Gonnella JS, Callahan CA, Veloski JJ, DeSantis J, Hojat M. Fifty Years of Findings from the Jefferson Longitudinal Study of Medical Education. Springer International Publishing; 2022.
13. Williams B, Beovich B. A systematic review of psychometric assessment of the Jefferson scale of empathy using the COSMIN risk of bias checklist. J Eval Clin Pract 2020;26:1302-15.
14. Hashempor M, Karami M. Validity and reliability of the Persian version of JSPE-HP questionnaire (Jefferson scale of physician empathy-health professionals version). J Kerman Univ Medi Sci 2012;19:201-11.
15. Shariat SV, Kaykhavoni A. Empathy in medical residents at Iran University of Medical Sciences. Iran J Psychiatry Clin Psychol 2010;16:248-56.
16. Razzaghi MR, Afshar L. A conceptual model of physician-patient relationships: A qualitative study. J Med Ethics Hist Med 2016;9:14.
17. Park C, Lee YJ, Hong M, Jung C-H, Synn Y, Kwack Y-S, *et al.* A multicenter study investigating empathy and burnout characteristics in medical residents with various specialties. J Korean Med Sci 2016;31:590-7.
18. Zubair MH, Hussain LR, Williams KN, Grannan KJ. Work-related quality of life of US general surgery residents: Is it really so bad? J Surg Educ 2017;74:e138-46.
19. Newton BW. Having heart: Affective and cognitive empathy scores vs. residency specialty match at an osteopathic medical school. Med Sci Educ 2022;32:423-36.
20. Unger A, Jahn R, Höflich A, Gruber M. "Psychiatry takes its time…" why does one become a psychiatrist?-A qualitative study. Psychiatr Prax 2021;49:198-204.
21. Weisz E, Cikara M. Strategic regulation of empathy. Trends Cogn Sci 2021;25:213-27.
22. Halpern J. From idealized clinical empathy to empathic communication in medical care. Med Health Care Philos 2014;17:301-11.
23. Howick J, Dudko M, Feng SN, Ahmed AA, Alluri N, Nockels K, *et al.* Why might medical student empathy change throughout medical school? a systematic review and thematic synthesis of qualitative studies. BMC Med Educ 2023;23:270.
24. Lee PT, Loh J, Sng G, Tung J, Yeo KK. Empathy and burnout: A study on residents from a Singapore institution. Singapore Med J 2018;59:50-4.
25. Andersen FA, Johansen AS, Søndergaard J, Andersen CM, Assing Hvidt E. Revisiting the trajectory of medical students' empathy, and impact of gender, specialty preferences and nationality: A systematic review. BMC Med Educ 2020;20:1-8.
26. Sulzer SH, Feinstein NW, Wendland CL. Assessing empathy development in medical education: A systematic review. Med Educ 2016;50:300-10.
27. Jin J, Li H, Song W, Jiang N, Zhao W, Wen D. The mediating role of psychological capital on the relation between distress and empathy of medical residents: A cross-sectional survey. Medical Educ Online 2020;25:1710326.
28. Nembhard IM, David G, Ezzeddine I, Betts D, Radin J. A systematic review of research on empathy in health care. Health services research. 2023;58:250-63.
29. Clark CT, Payne JL. Gender diversity in the psychiatric workforce: It's still a (white) man's world in psychiatry. Psychiatr Clin 2022;45:271-8.
30. Moralle MR, Preston JS, Chen L, Berberian WS. An exploratory study of empathy in resident physicians at an urban medical center. Int J Caring Sci 2016;9:526.
31. Noordman J, Post B, van Dartel A, Slits J, Olde Hartman T. Training residents in patient-centred communication and empathy: Evaluation from patients, observers and residents. BMC Med Educ 2019;19:128.
32. Malenfant S, Jaggi P, Hayden KA, Sinclair S. Compassion in healthcare: An updated scoping review of the literature. BMC Palliat Care 2022;21:80.